MONSANTO COMPANY
Safety Data Sheet
Commercial Product

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Product identifier

Acceleron® NemaStrike[TM] ST Soybeans

1.1.1. Chemical name
Not applicable.
1.1.2. Synonyms
None.
1.1.3. EPA Reg. No.
524-624

1.2. Product use
Nematacide

1.3. Company
MONSANTO COMPANY, 800 N. Lindbergh Blvd., St. Louis, MO, 63167
Telephone: 800-332-3111, **Fax:** 314-694-5557
E-mail: safety.datasheet@monsanto.com

1.4. Emergency numbers
FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT Call CHEMTREC - Day or Night: 1-800-424-9300 toll free in the continental U.S., Puerto Rico, Canada, or Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted).
FOR MEDICAL EMERGENCY - Day or Night: +1 (314) 694-4000 (collect calls accepted).

2. HAZARDS IDENTIFICATION

2.1. Classification
Classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200 (2012)
STOT RE - Category 2

2.2. Label elements
2.2.1. Signal word
WARNING!
2.2.2. Hazard pictogram/pictograms

2.2.3. Hazard statement/statements
May cause damage to adrenals through prolonged or repeated exposure.
2.2.4. Precautionary statement/statements
Do not breathe mist/vapours/spray.
Get medical advice/attention if you feel unwell.
Dispose of contents/container in accordance with local regulation.

2.3. Other hazards

Not applicable.

2.4. Appearance and odour (colour/form/odour)

Brown /Liquid, Slurry / No information.

Refer to section 11 for toxicological and section 12 for environmental information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Active ingredient

3-phenyl-5-(2-thienyl)- 1,2,4-oxadiazole; {Tioxazafen}

Composition

COMPONENT	CAS No.	% by weight (approximate)
Tioxazafen	330459-31-9	45.88
Surfactant		<=3
Hydrocarbon solvent	64742-47-8	<=3
Adjuvant		<=3
Water and minor formulating ingredients		<=46

The specific chemical identity is being withheld because it is trade secret information of Monsanto Company.

4. FIRST AID MEASURES

Use personal protection recommended in section 8.

4.1. Description of first aid measures

4.1.1. Eye contact: If in eyes, hold eye open and rinse slowly and gently for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.

4.1.2. Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

4.1.3. Inhalation: If inhaled, move person to fresh air. If person is not breathing, call emergency number or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.

4.1.4. Ingestion: Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison center or doctor. Do not give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

4.2.1. Eye contact, short term: Not expected to produce significant adverse effects when recommended use instructions are followed.

4.2.2. Skin contact, short term: Not expected to produce significant adverse effects when recommended use instructions are followed. May cause skin irritation.

4.2.3. Inhalation, short term: Not expected to produce significant adverse effects when recommended use instructions are followed.

4.2.4. Single ingestion: Not expected to produce significant adverse effects when recommended use instructions are followed.

4.3. Indication of any immediate medical attention and special treatment needed

4.3.1. Medical conditions aggravated by exposure: None.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

5.1.1. Recommended: Water, Foam, Dry chemical, Carbon dioxide (CO2)

5.2. Special hazards

5.2.1. Unusual fire and explosion hazards

Minimise use of water to prevent environmental contamination.
Environmental precautions: see section 6.

5.2.2. Hazardous products of combustion

Carbon monoxide (CO), Sulphur oxides (SOx), Nitrogen oxides (NOx)

5.3. Fire fighting equipment: Self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

5.4. Flash point

Does not flash.

6. ACCIDENTAL RELEASE MEASURES

6.1. Environmental precautions

Minimise spread.
Contain spillage with sand bags or other means.
Keep out of drains, sewers, ditches and water ways.
Do NOT contaminate water when disposing of rinse waters.

6.2. Methods for cleaning up

SMALL QUANTITIES:
Flush spill area with water.
LARGE QUANTITIES:
Absorb in earth, sand or absorbent material.
Dig up heavily contaminated soil.
Collect in containers for disposal.
Flush residues with small quantities of water.
Minimise use of water to prevent environmental contamination.

Refer to section 13 for disposal of spilled material.
Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

7. HANDLING AND STORAGE

Good industrial practice in housekeeping and personal hygiene should be followed.

7.1. Precautions for safe handling

Avoid contact with eyes, skin and clothing. When using do not eat, drink or smoke. Wash hands thoroughly after handling or contact. Wash contaminated clothing before re-use. Thoroughly clean equipment after use. Do not contaminate drains, sewers and water ways when disposing of equipment rinse water. Refer to section 13 of the safety data sheet for disposal of rinse water.

7.2. Conditions for safe storage

Keep out of reach of children. Keep away from food, drink and animal feed. Keep only in the original container. Keep away from direct sunlight.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Airborne exposure limits

Components	Exposure Guidelines
Tioxazafen	No specific occupational exposure limit has been established.
Surfactant	No specific occupational exposure limit has been established.
Hydrocarbon solvent	TLV (ACGIH): No specific occupational exposure limit has been established. PEL (OSHA): No specific occupational exposure limit has been established. Manufacturer suggested exposure limit: 1,200 mg/m3: 152 ppm: Measured as total hydrocarbon vapor
Adjuvant	No specific occupational exposure limit has been established.
Water and minor formulating ingredients	No specific occupational exposure limit has been established.

8.2. Engineering controls:

Provide local exhaust ventilation.

8.3. Recommendations for personal protective equipment

8.3.1. Eye protection:

No special requirement when used as recommended. If there is significant potential for contact: Wear chemical goggles.

8.3.2. Skin protection:

No special requirement when used as recommended. If repeated or prolonged contact: Wear chemical resistant gloves.

8.3.3. Respiratory protection:

No special requirement when used as recommended.If airborne exposure is excessive:Wear respirator.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

9. PHYSICAL AND CHEMICAL PROPERTIES

These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

Colour/colour range:	Brown
Odour:	No information.
Form:	Liquid, Slurry
Physical form changes (melting, boiling, etc.):	
Melting point:	No data.
Boiling point:	No data.
Flash point:	Does not flash.
Explosive properties:	No data.
Auto ignition temperature:	No data.
Self-accelerating decomposition temperature (SADT):	No data.
Oxidizing properties:	No data.
Specific gravity:	1.18 @ 20 °C
Vapour pressure:	No data.
Vapour density:	No data.
Evaporation rate:	No data.

Dynamic viscosity:	Not applicable.
Kinematic viscosity:	Not applicable.
Density:	1.17 g/cm3 @ 20 °C
Solubility:	Water: Slightly soluble.
pH:	9 - 10
Partition coefficient:	No data.

10. STABILITY AND REACTIVITY

10.1. Stability

Stable under normal conditions of handling and storage.

Compatible materials for storage: see section 7.2.

10.2. Hazardous decomposition

Thermal decomposition: Hazardous products of combustion: see section 5.

11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

Likely routes of exposure: Skin contact, eye contact, inhalation

Most important symptoms and effects, both acute and delayed

Eye contact, short term: Not expected to produce significant adverse effects when recommended use instructions are followed.

Skin contact, short term: Not expected to produce significant adverse effects when recommended use instructions are followed. May cause skin irritation.

Inhalation, short term: Not expected to produce significant adverse effects when recommended use instructions are followed.

Single ingestion: Not expected to produce significant adverse effects when recommended use instructions are followed.

Indication of any immediate medical attention and special treatment needed

Medical conditions aggravated by exposure: None.

Data obtained on product and components are summarized below.

Acute oral toxicity

Rat, LD50: > 5,000 mg/kg body weight
No mortality. Practically non-toxic.

Acute dermal toxicity

Rat, LD50: > 5,000 mg/kg body weight
No mortality. Practically non-toxic.

Acute inhalation toxicity

Rat, LC50, 4 hours, aerosol: > 5.06 mg/L
No mortality. Practically non-toxic.

Skin irritation

Rabbit, 3 animals:
Days to heal: 7
Primary Irritation Index (PII): 1.2/8.0
Slight irritation.

Eye irritation

Rabbit, 3 animals:
Days to heal: 0
Essentially non irritating.

Skin sensitization

Guinea pig, 3-induction Buehler test:
Positive incidence: 0 %
Negative.

Tioxazafen

Genotoxicity
Not genotoxic.

Repeated dose toxicity
Target organs/systems: Rat; adrenals
Target organs/systems: Rat; bone; Based on available data classification criteria are not met.
Target organs/systems: Mouse; liver; Based on available data classification criteria are not met.

Carcinogenicity
Not carcinogenic in rats.
Liver tumors and possibly other tumors in mice above the MTD; questionable relevance to humans.

Reproductive/Developmental Toxicity
No reproductive effects in rats.
Developmental effects in rats and rabbits only in the presence of significant maternal toxicity.

EXPERIENCE WITH HUMAN EXPOSURE
Skin contact, short term, occupational:
Skin effects: irritation, redness

12. ECOLOGICAL INFORMATION

This section is intended for use by ecotoxicologists and other environmental specialists.

Data obtained on product and components are summarized below.
Aquatic toxicity, fish
Rainbow trout (Oncorhynchus mykiss):
Acute toxicity, 96 hours, flowthrough, LC50: 0.184 mg/L
Aquatic toxicity, invertebrates
Water flea (Daphnia magna):
Acute toxicity, 48 hours, static, EC50: 3.5 mg/L
Aquatic toxicity, algae/aquatic plants
Green algae (Pseudokirchneriella subcapitata):
Acute toxicity, 72 hours, static, ErC50 (growth rate): 1.099 mg/L

Tioxazafen

Arthropod toxicity
Honey bee (Apis mellifera):
Contact, 48 hours, LD50: > 100 µg/bee
Dissipation
Soil, aerobic, 20 °C:
Half life: 22 - 237 days
Koc: 2,970 - 10,100 L/kg

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

13.1.1. Product

Keep out of drains, sewers, ditches and water ways. Recycle if appropriate facilities/equipment available. Burn in special, controlled high temperature incinerator. Follow all local/regional/national/international regulations.

13.1.2. Container

See the individual container label for disposal information. Emptied containers retain vapour and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed. Empty packaging completely. Triple or pressure rinse empty containers. Do NOT contaminate water when disposing of rinse waters. Ensure packaging cannot be reused. Do NOT re-use containers. Store for collection by approved waste disposal service. Recycle if appropriate facilities/equipment available. Follow all local/regional/national/international regulations.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

14.1. US Dept. of Transportation (DOT) Hazardous Materials Regulations (49 CFR Parts 105-180)

Proper Shipping Name (Technical Name if required):	Not regulated for domestic ground transportation. ()

14.1.1. Note

This product in single or combination packaging with a net quantity per single or inner packaging of 5 liters or less are not regulated for transport.

14.1.2. Special provisions

This material meets the definition of a marine pollutant.

14.2. IMDG Code

14.2.1. Note

Use description for ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

14.3. IATA/ICAO

14.3.1. Note

Use description for ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

15. REGULATORY INFORMATION

15.1. Environmental Protection Agency

15.1.1. TSCA Inventory

Exempt

15.1.2. SARA Title III Rules

Section 311/312 Hazard Categories:

See OSHA Hazard Communication Standard Categories in Section 2.1

Section 302 Extremely Hazardous Substances: Not applicable.

Section 313 Toxic Chemical(s): Not applicable.

15.1.3. CERCLA Reportable quantity

Not applicable.

15.1.4. Federal Insecticide, Fungicide, Rodenticide Act (FIFRA)

This chemical is a pesticide product regulated by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION!

Acute oral toxicity: FIFRA category IV.
Acute dermal toxicity: FIFRA category IV.
Acute inhalation toxicity: FIFRA category IV.
Skin irritation: FIFRA category IV.
Eye irritation: FIFRA category IV.

16. OTHER INFORMATION

The information given here is not necessarily exhaustive but is representative of relevant, reliable data.
Follow all local/regional/national/international regulations.
Please consult supplier if further information is needed.
In this document the British spelling was applied.

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose), NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), STOT SE (Specific Target Organ Toxicity, Single Exposure), STOT RE (Specific Target Organ Toxicity, Repeated Exposure),TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, MONSANTO Company or any of its subsidiaries makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for the purposes prior to use. In no event will MONSANTO Company or any of its

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